

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

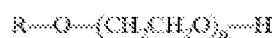
1. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanada et al. (# US 2003/0195275) in view of Wider et al. (# US 6071334).

Sanada et al. discloses:

- An ink composition comprising: (a) an aqueous medium (b) a pigment (see Abstract; [0038]-[0042]); and (c) a compound represented by the following formula ([0018]-[0022]; [0082]-[0086]), and the mixed compound of the formula (I) is contained in a critical micelle concentration or above (see Examples).

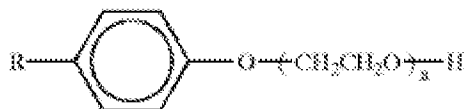
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[0018] Formula (1)



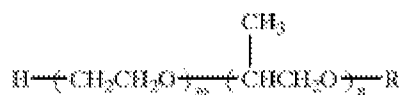
[0019] wherein, R represents an alkyl group and n represents a positive integer;

Formula (2)



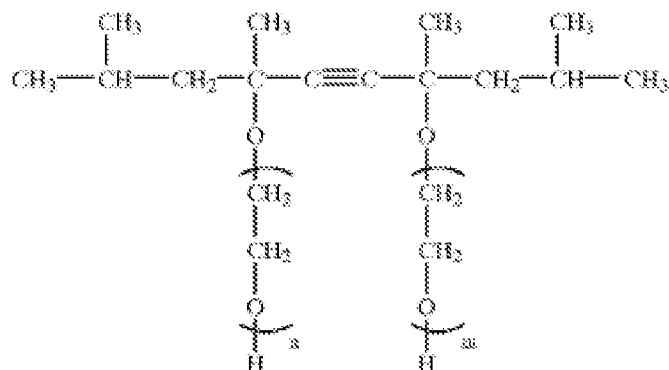
[0020] wherein, R represents an alkyl group and n represents a positive integer;

Formula (3)



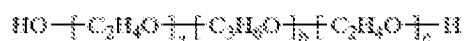
[0021] wherein, R represents a hydrogen group or an alkyl group, m and n represent positive integers independently;

Formula (4)



[0022] wherein, m and n represent positive integers independently;

Formula (5)



- The ink composition of comprising 10-70 wt % of a water-soluble organic solvent ([0077]; see Examples), wherein the water-soluble organic solvent comprises at least one organic solvent having a vapor pressure higher than that of water ([0074]-[0079]).
- The water-soluble organic solvent is selected from glycol ethers and/or polyhydric alcohols ([0076]).
- The pigment is a self-dispersion type pigment in which a carboxylic acid or a sulfonic acid is introduced on its surface ([0038]-[0042]).
- The pigment is C.I. Pigment Blue 15:3 or C.I. Pigment Blue 15:4 ([0042]).
- The pigment comprises at least one pigment selected from the group consisting of C.I. Pigment Red 122, and C.I. Pigment Violet 19 ([0042]).
- The pigment comprises at least one pigment selected from the group consisting of C.I. Pigment Yellow 74, C.I. Pigment Yellows 128 and 138, and C.I. Pigment Yellow 180 ([0042]).
- The pigment is a carbon black ([0040]).
- An ink set comprising the pigment is C.I. Pigment Blue 15:3 or C.I. Pigment Blue 15:4; the pigment comprises at least one pigment selected from the group consisting of C.I. Pigment Red 122, C.I. Pigment Red 209 and C.I. Pigment Violet 19; and the pigment comprises at least one pigment selected from the group

consisting of C.I. Pigment Yellow 74, C.I. Pigment Yellows 128 and 138, and C.I. Pigment Yellow 180; and the pigment is a carbon black ([0040]-[0042]).

- A recording method for recording images comprising allowing an ink composition disclosed above to adhere to a recording medium (see Examples).
- A recording method for recording images comprising applying a pressure to eject drops of an ink and to allow the drops to adhere to a recording medium ([0088]).
- An ink head comprising: (i) an ink tank retaining an ink composition (ii) an ink chamber having an ejection orifice through which drops are ejected, and having the ink composition fed from the ink tank; and (iii) a piezoelectric element provided inside the ink chamber and causing a strain in response to a voltage applied to the ink composition stored in the ink chamber (see Examples).
- An ink head comprising: (i) an ink tank retaining an ink composition; (ii) an ink chamber having an ejection orifice through which drops are ejected, and having the ink composition fed from the ink tank; and (iii) a heating element provided inside the ink chamber for heating the ink composition stored in the ink chamber to create a bubble so that a pressure is applied to the ink composition (see figure: 5-11).
- A recorded image, which is recorded by using an ink composition (see Examples).

Ogawa et al. differs from the claim of the present invention is that:

(1) The conductivity of aqueous medium is 250 microsecond/cm or lower, and conductivity of ink composition is 8 mS/cm (at 25.degree. C.) or lower.

(2) The water-soluble organic solvent comprises at least one organic solvent having a vapor pressure of 0.05 mmHg or lower at 20.degree. C.

Wider et al. teaches that to get the high quality printed image, ink composition includes, the conductivity of the ink composition is 8 mS/cm (at 25.degree. C.) or lower (see Examples). They also teaches that the water-soluble organic solvent comprises at least one organic solvent having a vapor pressure of 0.05 mmHg or lower at 20.degree. C (0.007) (column: 3, line: 1-10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink composition of Sanada et al. by the aforementioned teaching of Wider et al. in order to have a high quality printed image.

Wider et al. explicitly didn't teaches the conductivity of aqueous medium is 250 microsecond/cm or lower. However Wider et al. used water as the aqueous medium, and which is same as applicant claimed invention, so it would have been obvious that the Wider et al. water has same conductivity, which is lower than the 250 microsecond/cm.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (571) 272-2152. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Manish S. Shah/
Primary Examiner
Art Unit 2853

/MSS/